

REMARKS

Claims 1-21 are pending in this application. Claims 1, 17, and 21 are amended. No new subject matter is added. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated July 27, 2005.

Applicants amend claims 1, 17, and 21 to correct a typographical error in the spelling of “mask”.

Claims 1, 2, 5, 6, 9, 10, 13, 14, and 17-21 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,787,907 to *Watanabe et al.* In view of the following remarks, Applicants respectfully request that the Examiner withdraw the rejections of these claims.

The Examiner remarked that *Watanabe et al.* teaches “etching the second interlayer insulating film again by using the hard mask as a mask” in Figs. 1C and 1F and col. 9, lines 56-67. The Examiner concluded that this feature “is inherent since before the hard mask 16 is completely removed along with the etch stopper 12, it acts as a mask in the etching again of the insulating layer 15.” [Office Action at p. 6].

“[W]hen an examiner relies on inherency, it is incumbent on the examiner to point to the 'page and line' of the prior art which justifies an inherency theory.” Ex parte Schricker, 56 USPQ2d 1723 (BPAI 2000). In this Action, the Examiner pointed to column 9, lines 56-67. However, this section fails to justify the inherency theory relied upon by the Examiner. However, this section merely discloses that “[d]uring the process of etching the first etch stopper layer 12...the second interlayer insulating film is etched in some cases.” This reference does not require that etching *necessarily* be carried out twice when the wiring trench is formed in the

second interlayer insulating film. [claim 1, page 7, lines 13-5; The Court of Appeals for the Federal Circuit analyzes inherent disclosures on the basis of requiring an inherency to be "necessarily present" and not merely sometimes, occasionally, or possibly present.] Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of these claims.

Also, *Watanabe* does not disclose, teach or suggest "embedding an embedded material to a level higher than the first interlayer insulating film and lower than the top surface of a layered stack composed of the first interlayer insulating film, the etching stopper film, and the second interlayer insulting film in the via hole..." [claim 1]. Therefore, the rejection is unsupported by the art and should be withdrawn.

For example, in *Watanabe*, there is a description, relating to the height of the filler 55, that it is preferable to set the upper surface of the filler 55 lower than the upper surface of the second etch stopper layer 14. [Column 8, lines 65-67]. This description opposes the invention according to claim 1 of the present application.

In the present invention, the embedded material is embedded to a level higher than the first interlayer insulating film. Therefore, the first interlayer insulating film never receives any bad influence even if the height varies somewhat.

Moreover, while Figs. 17AB and 17BB, and the relevant explanation in the specification disclose that the filler 55 is made high, there is no description relating to an etching process after making the filler 55 in the reference *Watanabe*. Moreover, it is concluded that abnormal etching occurs since the filler is high. This conclusion opposes the effect of the present invention.

Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of these claims.

Claims 3, 4, 7, 8, 11, 12, 15, and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Watanabe* in view of APA. As these claims depend from independent claim 1, these claims should likewise be allowable in view of the remarks provided above. Accordingly, Applicants respectfully request that the rejection of these claims be withdrawn.

Claims 1-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over *APA* in view of U.S. Patent No. 6,794,293 to *Li et al.*. In rejecting these claims, the Examiner acknowledged that the APA fails to disclose the claim height of the embedded material *and* etching the second interlayer insulating film again by using the hard mask as a mask. However, the Examiner concluded that *Li et al.* discloses these features (See Fig. 1C, 7E-F). In view of the following remarks, Applicants respectfully request that the Examiner withdraw the rejections of these claims.

In rejecting these claims, the Examiner has mischaracterized the teachings of *Li et al.* Fig. 7E-F of *Li et al.* discloses a method of trench formation within a dielectric layer (that does not have an intermediate etch stop layer) whereby a trench is etched with a first gas mixture to a first depth, and a second gas mixture is used to further etch the trench to the final desired trench depth. [See abstract]. Whereas, forming a wiring trench according to claims 1, 17 and 21 comprises the steps of separately etching, removing and etching again. Accordingly, Applicants respectfully request that the rejection of these claims be withdrawn.

Amendment Under 37 C.F.R. §1.116
Serial No. 10/696,588
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In view of the aforementioned amendments and accompanying remarks, Applicant submits that the claims, as herein amended, are in condition for allowance. Applicant requests such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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